Final Proposed Plan for Lakehurst Former Mobile Aircraft Launch and Recovery Equipment Munitions Response Site (ZZ002), Joint Base McGuire-Dix-Lakehurst, New Jersey

June 2025

The Department of the Air Force (DAF) invites you to comment on the proposed remedy for the ZZ002 Former Mobile Aircraft Launch and Recovery Equipment (MALRE) **Munitions Response Site (MRS)** located at the Lakehurst Area of Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey (**Figure 1**).

The ZZ002 MRS is part of the **Military Munitions** Response Program (MMRP). The purpose of the MMRP is to identify and address munitions and munitions-related contaminants from former activities at closed and closing military munition ranges.

This Proposed Plan summarizes previous investigations completed at the ZZ002 MRS and documents that no remedial action is necessary to ensure protection of human health and the environment**.**

This Proposed Plan also summarizes information that can be found in greater detail in the 2006 **Preliminary Assessment (PA)** Report and other supporting documents, which can be accessed at the **Administrative Record (AR)** website referenced on the right side of this page. Information related to the ZZ002 MRS from the 2024 Final **Remedial Investigation (RI)** Report, which was prepared for multiple MMRP sites (ZZ002, ZZ004, ZZ005, and ZZ006), is also summarized.

This Proposed Plan is issued by the USAF, the lead response agency for MMRP activities, and the United States Environmental Protection Agency (USEPA), the lead regulatory agency for the site, who will jointly select the final remedy after reviewing and considering all information submitted during the 30-day public comment period.

As required by **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** Section 120(e)(4) and the **Federal Facility Agreement (FFA)** with the United States Air Force (USAF) for JB MDL, the USEPA must co- select the final remedy. In addition, the USAF will consult with the New Jersey Department of Environmental Protection (NJDEP). The USAF, in conjunction with the USEPA, may modify the proposed remedy or select another response action based on new information or public comments.

— MARK YOUR CALENDARS —

Public Comment Period August 4, 2025 to September 2, 2025

In Person and Virtual Public Meeting August 7, 2025

Details of the public meeting will be advertised in the Asbury Park Press, Burlington County Times, and Pine Barrens Tribune. JB MDL Restoration Advisory Board members will also receive meeting details via email.

For questions and comments about this Proposed Plan, please contact:

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For information please see the AR file, online at:
https://ar.cce.af.mil/

Therefore, the USAF and USEPA encourage the public to review and comment on the remedy presented in this Proposed Plan, as well as review site documents to gain a better understanding of the site and previous investigations. The documents are available in the AR file, online at https://ar.cce.af.mil/.

To access records, click "Continue to Site" to view the main page. From the "Active Duty Installation List" on the left, scroll down and select "JB MDL- Lakehurst, NJ." In the "Subject or Title" box, type in "ZZ002" and click "Search." Scroll down to see available documents. Click on the OBJ icon to open and view a document.

(Note: Words in **bold** are defined in the Glossary of Terms on **Page 11**.)

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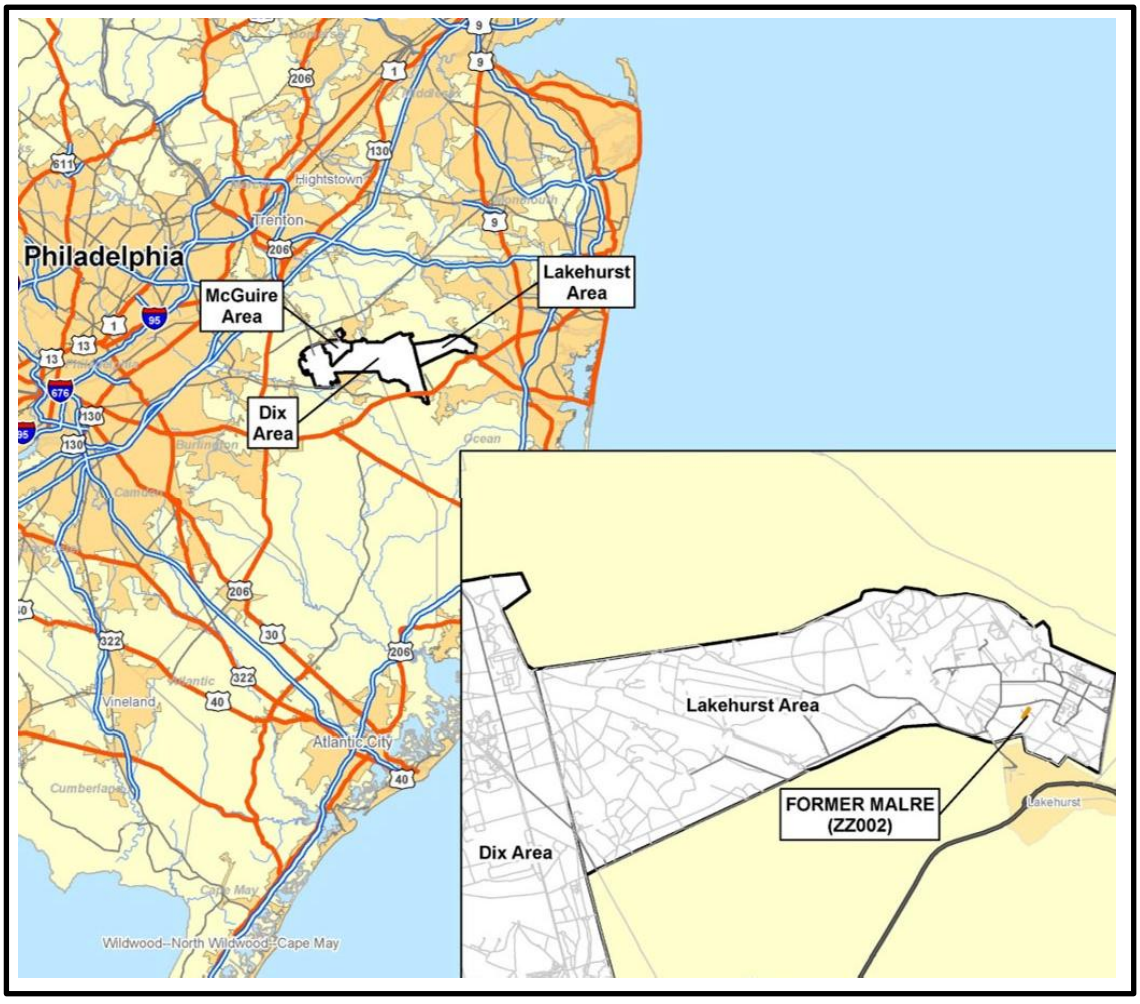
Figure 1. Site Location Map



DCN: TRVT-0005-0297-0012

THE CERCLA CLEANUP PROCESS

Environmental investigations and cleanups follow the steps shown in **Figure 2**. These investigations are carried out in accordance with the CERCLA**,** the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**, and Executive Order 12580, which delegates the implementation of CERCLA to the USAF for facilities under its jurisdiction, custody or control.

Previous investigations at the ZZ002 MRS that have been completed are steps within the CERCLA process, including the PA and RI.

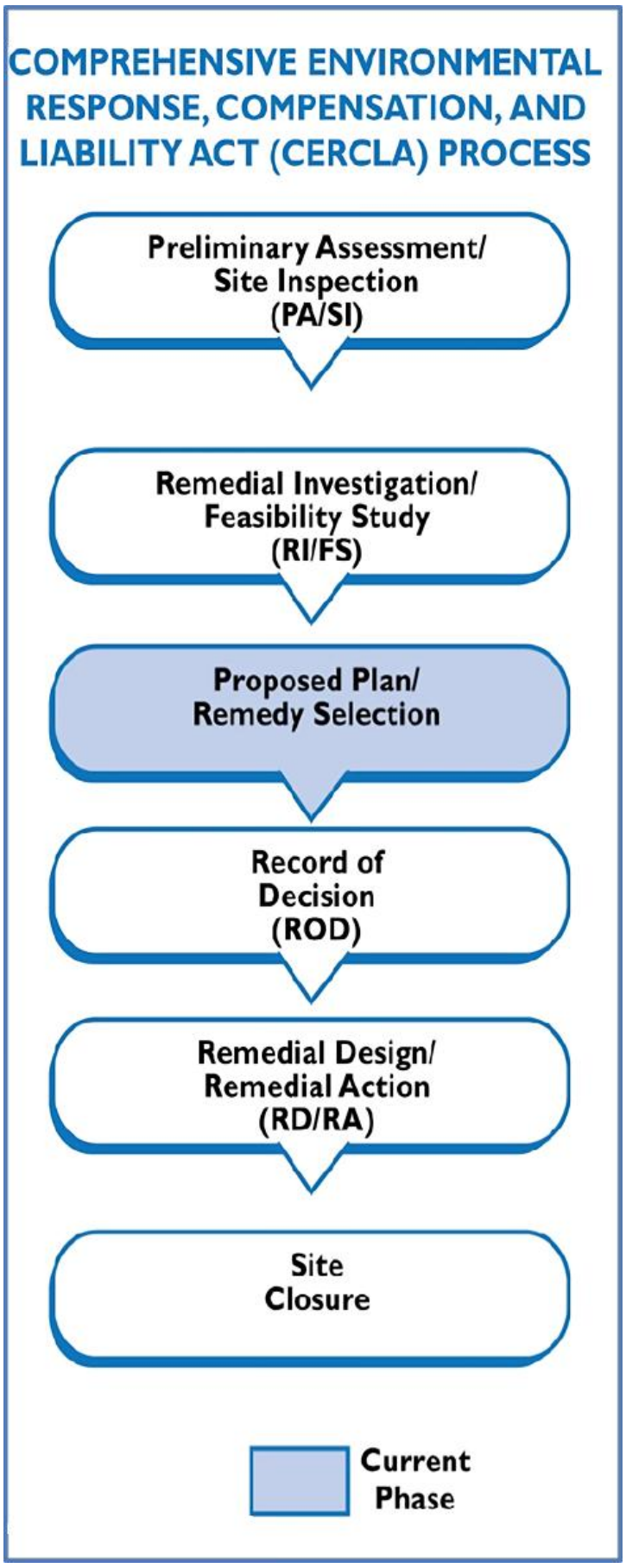
This document represents the next step in the CERCLA cleanup process which is the Proposed Plan (**Figure 2**).

The Proposed Plan is based on previous field investigations, reports, and analyses of those reports. The Proposed Plan presents site information to the public, identifies alternatives that were considered, provides the rationale for the proposed remedy, and solicits public comments.

After the public comment period for this Proposed Plan closes, the USAF and USEPA will review comments received during the public comment period and either select the proposed remedy as the final remedy, modify the proposed remedy, or select another response action. The USAF will summarize and respond to public comments in a Responsiveness Summary which will be included in the **Record of Decision (ROD)** that will document the selected remedy for the ZZ002 MRS. After the ROD comes the **Remedial Design/Remedial Action (RD/RA)** phase, followed by **Site Closure** (**Figure 2**), if appropriate for the site.

At the ZZ002 MRS, the RD/RA phase is unlikely to occur because no action is the proposed remedy, and if that is selected as the final remedy, the ROD would be followed by Site Closure.

Figure 2. Cleanup Process under CERCLA



SITE HISTORY AND BACKGROUND

JB MDL is located in Burlington and Ocean counties, and is approximately 20 miles southeast of Trenton, New Jersey. The base is approximately 14 miles inland from the Atlantic Ocean. JB MDL is located within the Pinelands National Reserve, a pine-forested area that covers about 1.1 million acres of coastal plain. The installation covers more than 42,000 contiguous acres of federal property. It is surrounded by an additional 58,000 acres of state- and federally-managed land.

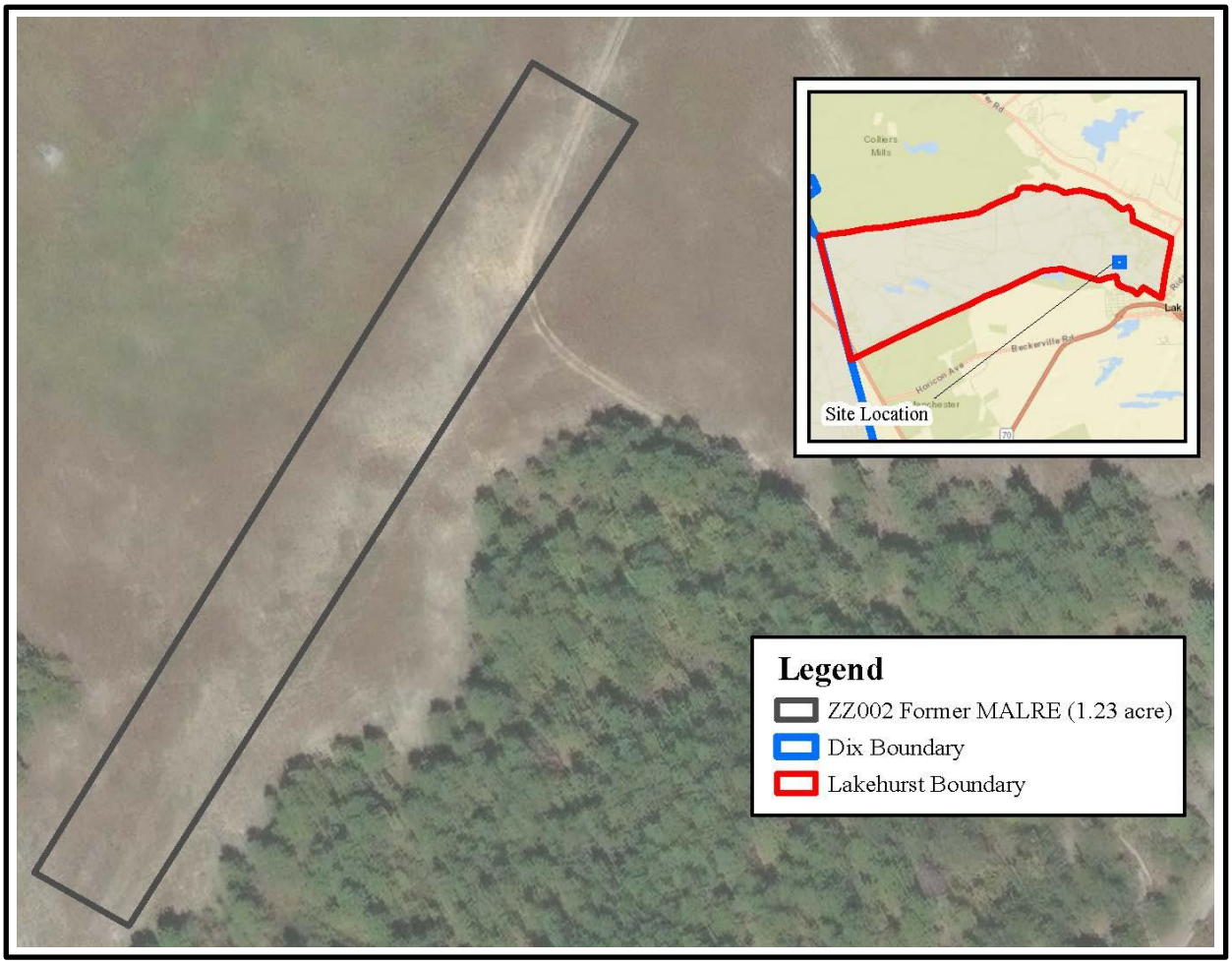
ZZ002 MRS

The ZZ002 MRS is a 1-acre area located in the eastern portion of the Lakehurst Area of JB MDL. The site itself (**Figure 3**) was used by the Expeditionary Air Field School for testing and development of anchoring gear systems (e.g. Lightweight Earth Anchor-20 earth anchor).

These earth anchors were reportedly used to hold down mobile aircraft arresting systems for use at remote landing strips. The premise of this application was to use explosives to create a hole for the construction of the earth anchor system in locations where more conventional excavation equipment and methods were not available. During anchor installation, Composition 4, or C4, explosive charges (containing mostly **hexahydro-1,3,5- trinitrol-1,3,5-triazine [RDX]**) were placed at the bottom of augered boreholes and detonated to create an upwardly-opening funnel-shaped cavity in the ground. An anchor was then emplaced, and the cavity filled with cement to create the foundation for the anchor system.

According to JB MDL personnel and available documentation, the ZZ002 MRS was operated from the 1960s through the early 1990s and no other munitions or explosives were used besides C4.

Figure 3. MRS ZZ002 Site Boundary



PREVIOUS INVESTIGATIONS AND SURVEYS

The following summarizes the various phases of investigation that have been performed at the ZZ002 MRS to evaluate potential soil and groundwater impacts.

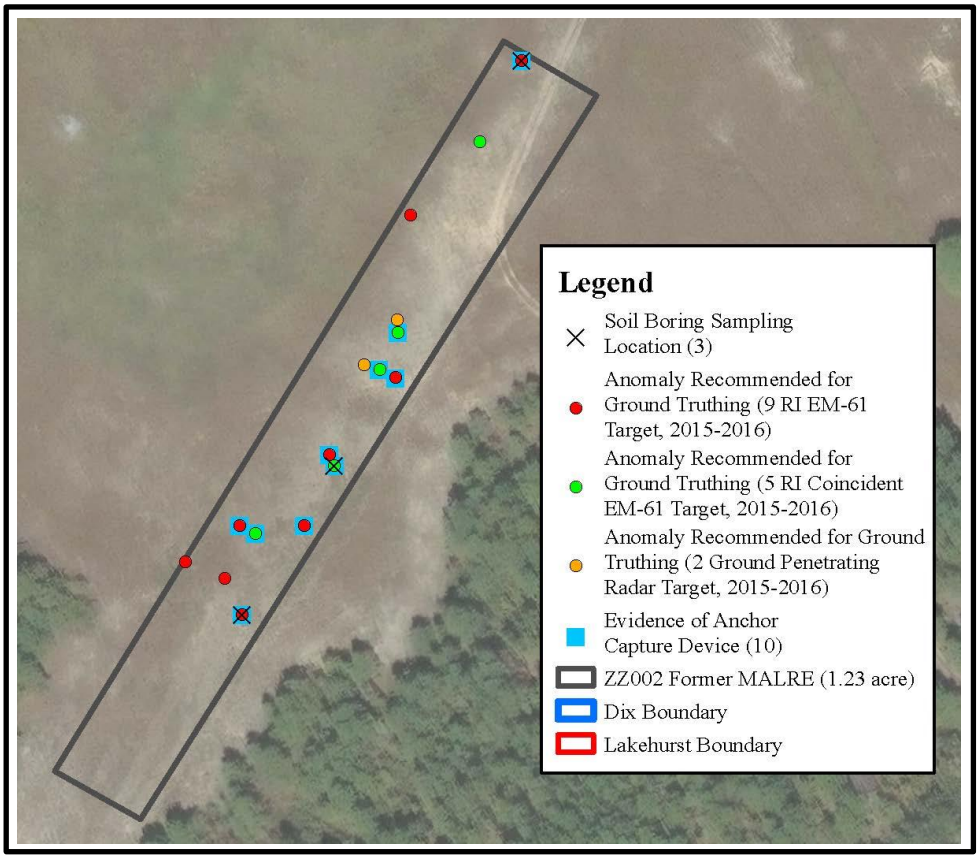
Preliminary Assessment (2005) — Available historical documents regarding development and operation of the ZZ002 MRS were assembled and reviewed for the PA. Based on the information reviewed, the USAF recommended No Action with respect to **Munitions and Explosives of Concern (MEC)** and a site inspection to ensure that any remaining chemical or **Munitions Constituents (MC)** are not migrating to the groundwater. In lieu of a site inspection, the site moved directly to an RI where additional investigation was completed.

Remedial Investigation (2015-2016) — During the RI, **digital geophysical mapping (DGM)** (which creates images of underground objects) was performed to identify subsurface anomalies potentially representing suspect anchor systems.

Ground-truthing was then performed at recommended locations where anomalies were identified during the geophysical investigation to unearth the top of anchor systems, if present, or to determine if the anomalies represented cavities that were backfilled following detonations (**Figure 4**). Several anchor systems were discovered during the RI ground-truthing efforts, but no cavities indicative of backfilled material were identified. Three of the locations where earth anchor systems were found were selected as locations for soil boring sampling to test for explosives constituents and determine if potential MC were present in subsurface soil (down to 10 feet below ground surface [bgs]) from historic practices used to install anchor capture devices (**Figure 4**). Additionally, **incremental sampling (IS)** was performed down to 1 foot bgs across the entire ZZ002 MRS to test for explosives constituents and assess whether MC from historic site activities was present in surficial soils.

No explosives constituents were detected in any of the subsurface soil boring samples or surficial IS soil samples.

Figure 4. Geophysical Survey Anomalies and Soil Boring Locations



Because C4 was the only type of munition or explosive historically used at the site, for the specific purpose of creating holes in the ground for anchors to be installed, the RI samples only needed to be analyzed for the specific constituents related to C4 use and no other type of MC analysis was done.

Because no MC were detected in any of the soil samples, impacts to groundwater were not likely and USAF and USEPA concluded that an evaluation of groundwater was not warranted.

Prior to the completion of the RI, the USAF prepared a memorandum in June 2016 that outlined a proposed groundwater sampling plan for several sites at JB MDL-Lakehurst, including the ZZ002 MRS. However, since the USAF and USEPA had determined, based on the RI, that an evaluation of groundwater was not warranted, the sampling plan for the ZZ002 MRS was not executed.

Therefore, the USAF identified no human health or environmental impacts and determined that all exposure pathways for MC were incomplete for the ZZ002 MRS.

SITE CHARACTERISTICS

The ZZ002 MRS is open and vegetated primarily with grass. There are no surface water bodies, wetlands, historic buildings, or cultural resources within or immediately adjacent to the MRS. The site is not a designated hunting area. However, a bow- hunting area is adjacent to the ZZ002 MRS.

Currently, the ZZ002 MRS is not used. The 2015 Installation Development Plan for JB MDL does not specifically state any future land use for the ZZ002 MRS but identifies the site as located within the Research Campus District. The Research Campus District is located on the southeast end of the Lakehurst Area and has four future land uses: Industrial, Open Space, Operations: Airfield, and Research, Development, Test, and Evaluation.

The mean elevation of the ZZ002 MRS is approximately 71 to 74 feet above mean sea level. The site is consistent with the Lakehurst Area of JB MDL and is flat with minor hills and intervening low-lying areas. It is underlain by approximately 2,000 feet of unconsolidated coastal sediments that overlie crystalline bedrock. The coastal sediments generally consist of sands, silts, clays, and gravels. Overlying the coastal sediments are discontinuous deposits of more recent sand and gravel deposits emplaced by the melting of northern glaciers.

JB MDL overlies the Kirkwood-Cohansey aquifer system. The sandy soils and undeveloped nature of the site collectively aid in the recharge of the aquifer by precipitation. The depth to shallow groundwater ranges from approximately 8 to 60 feet bgs across the base. No groundwater investigation was conducted at the ZZ002 MRS during the PA or RI, therefore site-specific groundwater information is not available, but groundwater flow is expected to be to the southeast. The estimated depth to groundwater is approximately 25 feet bgs. Although the installation contains wetland areas, no wetlands have been mapped within the site boundary.

SUMMARY OF SITE CONTAMINATION

MEC was not found during previous investigations at the ZZ002 MRS. As a result, the USAF recommended no action with respect to MEC.

Based on historical operations at the ZZ002 MRS, potential MC included explosives residue, primarily small particles of unreacted RDX and RDX degradation products. However, no explosives constituents were detected in site soil during the RI. Because MC was not detected in soil, USAF concluded that all exposure pathways for MC were incomplete for the ZZ002 MRS, impacts to groundwater were not likely, and a groundwater investigation was not warranted.

SCOPE AND ROLE OF THE ACTION

This Proposed Plan addresses the ZZ002 MRS which is one of the six MMRP Sites at JB MDL Lakehurst. Out of the six MMRP Sites, five are expected to have RODs signed in the future. The sixth site, located within an operable range area, will be administratively closed (active ranges are ineligible for inclusion in the MMRP under the Defense Environmental Restoration Program [DERP] statute) and addressed separately in the future. MMRP site activities have been and are currently being performed in accordance with the CERCLA remedial process and, to the extent practicable, the NCP.

Future investigations, remedy selection, and closure for other MRSs are pending; however, those activities do not impact the fate of the ZZ002 MRS.

SUMMARY OF SITE RISKS

The 1-acre ZZ002 MRS is located within the Lakehurst Area of JB MDL. Access to JB MDL requires admittance through the security gate and there is a fence around the perimeter of the base. Once on JB MDL, there are no access restrictions to the ZZ002 MRS to prevent recreational users, such as hunters, from entering the MRS.

The ZZ002 MRS is located south of Houghton Road, approximately midway between Hangars 1 and 5, and can be accessed by vehicle from the north via a dirt road which enters the MRS on the north.

Because all soil samples (collected up to 10 feet bgs) were non-detect and no **contaminants of potential concern** were identified, the ZZ002 MRS was not evaluated in the human health or ecological risk assessments. Groundwater was not evaluated in the human health or ecological assessments since MC were not detected in soil samples, confirming impacts to groundwater were unlikely as a result of site activities.

Because MEC was not found during previous investigations conducted at the site, an evaluation of the MEC hazards was not required.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are not required for the ZZ002 MRS because no unacceptable risks to human health or the environment due to MEC or MC are present.

In accordance with EPA's *Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (July 1999, OSWER 9200.1)*, the requirements to provide a summary of remedial alternatives and an evaluation of alternatives in the Proposed Plan do not apply to the ZZ002 MRS because there are no unacceptable risks to human health or the environment due to MEC or MC.

PROPOSED REMEDY

Since no human health or ecological risks or hazards are present at the ZZ002 MRS, there is no basis of action for site media. The site meets the **Unlimited Use/Unlimited Exposure (UU/ UE)** conditions. Therefore, the USAF believes the proposed remedy of No Action is appropriate for the ZZ002 MRS. The proposed remedy is protective of human health and the environment since all MC soil samples were non-detect for all explosive analytes and MEC was not found during previous investigations conducted at the site.

RECORD OF DECISION

If public comments do not require a reevaluation of the proposed remedy, the USEPA and the USAF will sign a ROD, in consultation with NJDEP, following the public comment period. It will document the proposed remedy as the remedy for the site and include the USAF's responses to comments received during the public comment period.

COMMUNITY PARTICIPATION

Public input is important in the decision-making process. Nearby residents and interested parties are encouraged to ask questions about the proposed remedy for the ZZ002 MRS. The USAF will summarize and respond to public comments in a responsiveness summary, which will become part of the official ROD.

The publication of the Proposed Plan, and the opportunity for comment and a meeting on the Proposed Plan, fulfill the public participation requirements of CERCLA Section 117(a), which specifies that the lead response agency (the USAF in this case) must publish a notice and a brief analysis of the Proposed Plan. The documents discussed in this Proposed Plan are available for public review in the AR and at the Information Repositories.

COMMENT PERIOD AND PUBLIC MEETING

The public comment period for this Proposed Plan offers the public an opportunity to provide input into the process for selecting a remedy controlling contamination and risks at the ZZ002 MRS.

A public meeting will be held to provide information on the Proposed Plan, prior to selection of a final remedy for the ZZ002 MRS. The public is encouraged to attend the meeting to learn more about the proposed alternative remedy for the site. The meeting will also provide an additional opportunity for the public to submit comments to the USAF on this Proposed Plan.

For further information related to the public comment period and public meeting, please refer to "Mark your Calendars" on **Page 1.**

The next page provides a form on which you may comment in writing and submit in person or mail to the USAF. You may also comment verbally at the meeting. Finally, you may email your comments.

PROJECT CONTACTS FOR MORE INFORMATION

If you have questions about this Proposed Plan, please contact the following:

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(701) 509-4303

INFORMATION REPOSITORIES

Documents relating to this Proposed Plan can be found for public review at the following information repositories:

Online Administrative Record File: https://ar.cce.af.mil/

Ocean County Library*
101 Washington St
Toms River, NJ 08753
https://theoceancountylibrary.org/
(734) 349-6200

***Please call or visit the library website for current hours of operation.**

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the ZZ002 MRS at JB MDL-Lakehurst are important to JB MDL, the USEPA, and the NJDEP. Comments provided by the public are valuable in helping to select a final cleanup remedy for the site.

You may provide oral comments at the meeting or you may use the space below to write your comments. Comments must be submitted to Mr. James Richman, USAF by the last day of the comment period. If mailing comments, all written comments must be postmarked no later than September 2, 2025. If you have any questions about the comment period, please contact Mr. Richman at (609) 754-2267. You may also submit your comments by email at james.richman.1@us.af.mil.

Name _____

Address _____

City _____

State, Zip _____

Comments:

James Richman
Chief, Environmental Restoration Program
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Joint Base McGuire-Dix-Lakehurst, NJ 08641

INVITATION TO COMMENT

On the Proposed Plan for
Former Mobile Aircraft Launch and Recovery Equipment MRS (ZZ002)
Joint Base McGuire-Dix-Lakehurst, New Jersey

IMPORTANT DATES TO REMEMBER

Public comment period
August 4 to September 2, 2025

Public Meeting
August 7, 2025 at 6:00 p.m.

GLOSSARY OF KEY TERMS

Administrative Record (AR): A compilation of all documents relied on to select a remedial action pertaining to the investigation and remediation of the project site.

Chemical of Potential Concern (COPC): Any chemical that is shown to pose possible risk to humans a site. COPCs are identified by comparing maximum concentrations of contaminants detected at a site to the lowest human health risk-based screening levels .

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Also known as the "Superfund" statute, this federal law was passed in 1980 and regulates environmental investigation of releases of hazardous substances and cleanup of sites from past operations identified as possibly posing a risk to human health and the environment.

Digital Geophysical Mapping (DGM): Digital methods used for systematic collection of information for the detection of subsurface anomalies using electromagnetic or other geophysical sensing technologies. The geophysical data are corelated with geospatial positioning measurements.

Ground-truthing: Allows confirmation of digital geophysical survey data to real features in the subsurface. In this case, ground-truthing includes hand-digging at locations that were identified as anomalies during the geophysical investigation to confirm the presence of features/materials in the ground.

hexahydro-1,3,5-trinitro-1,3,5-triazine (also known as RDX): This synthetic compound, also known as Royal Demolition Explosive, Research Department Explosive, cyclonite, hexogen and T4, is a highly powerful explosive that is present in more than 4,000 military items, from large bombs to very small igniters.

Incremental Sampling (IS): A method used in environmental investigations for collecting samples of potentially contaminated soils for chemical analysis in a way that allows accurate characterization of contamination in soils at a site. IS reduces data variability and increases sample representativeness

Military Munitions: All ammunition products and components produced for, or used by, the armed forces for national defense and security. This includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents; smokes, and incendiaries including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers; demolition charges; and devices and components thereof.

Munitions Constituents (MC): MCs are metals and explosives that may have been released from small arms ammunition into soil or groundwater.

Munitions and Explosives of Concern (MEC): Classification for those military munitions that pose an explosive safety risk.

Munitions Response Site (MRS): A discrete location on a defense site that is known or suspected to contain unexploded ordnance, discarded military munitions, or MC.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The NCP is the primary regulation of CERCLA. NCP regulations provide the Federal government the authority to respond to the problems of abandoned or uncontrolled hazardous waste disposal sites as well as to certain incidents involving hazardous wastes (e.g., spills). The NCP is codified in Title 40 Code of Federal Regulations Part 300.

National Priorities List: The United States Environmental Protection Agency's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the CERCLA, or "Superfund" program.

No Action: A determination issued by the relevant environmental regulatory agency stating that identified contaminants present at the property have been investigated and remediated in accordance with applicable remediation statutes, rules and guidance, to a standard appropriate for the intended use of the property and/or offsite locations affected by migrating contamination.

Preliminary Assessment (PA): A PA is the first step in the process of evaluating a site potentially contaminated with hazardous substances or pollutants pursuant to CERCLA and the NCP. Typically, a PA will include reviewing historical site documents, conducting interviews, and performing a visual site inspection.

Proposed Plan: Presents the proposed alternative for a site to the public and briefly summarizes the alternatives studied in the detailed analysis phase of the RI and FS, highlighting the key factors that led to identifying the proposed alternative. The Proposed Plan, as well as the RI/FS and the other information that forms the basis for the lead agency's response selection, is made available for public comment in the AR file. An opportunity for a public meeting must also be provided at this stage.

Record of Decision (ROD): Documents the remedial action plan for a site or operable unit and (1) certifies that the remedy selection process was carried out in accordance with CERCLA and, to the extent practicable, with the NCP, (2) describes the technical parameters of the remedy, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection. The ROD is part of the AR file, which contains the full details of site characterization, alternatives evaluation, and remedy selection.

Remedial Action Objective (RAO): Goal for protecting human health and the environment. RAOs should specify the contaminant of concern, exposure route, receptors and acceptable contaminant level.

Remedial Design/Remedial Action (RD/RA): Documents the design and technical specifications for cleanup remedies and technologies. Remedial action follows the remedial design phase. It involves the actual construction or implementation phase of cleanup. The RD/RA is based on the specifications described in the ROD.

Remedial Investigation (RI): An in-depth study designed to gather the data necessary to determine the nature and extent of known contamination at a site, assess risk to human health and the environment, and establish criteria for cleaning up the site.

Site Closure: The final phase in the CERCLA cleanup process that can be achieved when all site cleanup goals are met, and the site has attained unlimited use, unrestricted exposure levels.

Unlimited Use/Unlimited Exposure (UU/UE): A finding that there are no restrictions on the potential use of land or other natural resources.